

DEPARTMENT OF THE INTERIOR

---

REPORT OF  
THE ACTING SUPERINTENDENT OF THE  
YELLOWSTONE NATIONAL PARK

TO THE SUR  
LIBRARY  
DEPT. OF THE INTERIOR  
CONGRESS

SECRETARY OF THE INTERIOR

1915





DEPARTMENT OF THE INTERIOR

---

REPORT OF  
THE ACTING SUPERINTENDENT OF THE  
YELLOWSTONE NATIONAL PARK

TO THE

SECRETARY OF THE INTERIOR

1915



UP2

1198



## CONTENTS.

---

	Page.
General statement.....	5
Travel.....	5
Automobiles.....	7
Concessions.....	8
Stream gaging.....	8
Roads.....	9
Belt line road (including north entrance road) .....	10
West approach.....	12
South approach—	
In the park.....	13
In the forest reserve.....	13
East approach—	
In the park.....	14
In the forest reserve.....	15
Cooke City road.....	15
Work in general.....	16
Fish.....	17
Wild animals:	
Antelope.....	17
Deér.....	18
Elk.....	18
Moose.....	19
Buffalo.....	19
Bears.....	22
Coyotes and wolves.....	22
Mountain lions.....	22
Mountain sheep.....	22
Other animals.....	22
Birds.....	22
Protection of game.....	23
Violations of law.....	23
Sanitation.....	24
Forest fires.....	25
Improvements.....	25
Natural phenomena.....	27
Concessions.....	27
Recommendations.....	30
Appendix:	
Regulations governing the distribution of animals from the Yellowstone National Park, 1914-15.....	31
General regulations approved May 27, 1911.....	32
Instructions approved April 15, 1914.....	33
Regulations governing the admission of automobiles for the season of 1915. Schedules and general instructions.....	36 37

---

## ILLUSTRATION.

Map of Yellowstone National Park.....	20
---------------------------------------	----



Digitized by the Internet Archive  
in 2013

# REPORT OF THE ACTING SUPERINTENDENT OF THE YELLOWSTONE NATIONAL PARK.

DEPARTMENT OF THE INTERIOR,  
YELLOWSTONE NATIONAL PARK,  
OFFICE OF SUPERINTENDENT,  
*Yellowstone Park, Wyo., September 30, 1915.*

SIR: I have the honor to submit annual report of the condition of affairs in and the management of the Yellowstone National Park from October 15, 1914, to the present date.

## GENERAL STATEMENT.

The Yellowstone National Park, set aside by act of March 1, 1872 (secs. 2474 and 2475, R. S., 17 Stat., 32), is located in the States of Wyoming, Montana, and Idaho. It has an area of about 2,142,720 acres and an average altitude of about 8,000 feet.

The military force available for duty in the park consists of a detachment of 200 soldiers of the Cavalry Arm of the service, trained in the different Cavalry regiments and detached therefrom for this special service.

The headquarters is located at Fort Yellowstone, but the command also garrisons 15 soldier stations scattered throughout the park, requiring 135 men during the tourist season and 75 during the remainder of the year.

A telephone system connects the soldier stations and the post.

In addition to the military force which is maintained by the War Department, the Interior Department furnishes certain civilian employees, namely, a clerk, scouts, a buffalo keeper, etc.

The detachments of soldiers at the 15 stations performed their duties in a very satisfactory manner.

## TRAVEL.

An unusually early spring opened all roads to travel before the tourist season, but on account of heavy rains in May and up to past the middle of June, they were very muddy for a few days after the opening on June 14, but dried up so rapidly that they required sprinkling before the end of the month.

The aggregate number of persons making park trips during the season of 1915 was as follows:

*Travel during the season of 1915.*

Guests at hotels:

Entering via the western entrance with Yellowstone-Western Stage Co. ....	20, 151
Entering via the northern entrance with Yellowstone Park Transportation Co. ....	6, 722
Entering via eastern entrance with Holm Transportation Co. ....	144
	<hr/> 27, 017

Wylie Permanent Camping Co.:		
Entering via northern entrance.....	3, 306	
Entering via western entrance.....	7, 027	
Entertaining via eastern entrance.....	208	
	<hr/>	10, 541
Shaw & Powell Camping Co.:		
Entering via northern entrance.....	3, 261	
Entering via western entrance.....	1, 966	
	<hr/>	5, 227
Hefferlin Camps:		
Entering via northern entrance.....	1, 080	
Entering via western entrance.....	612	
	<hr/>	1, 692
With other licensees of personally-conducted camping parties.....		265
Making park trips with private transportation:		
With automobiles.....	3, 513	
With other private transportation as "private camping parties"....	3, 448	
	<hr/>	6, 961
Total making park trips.....		51, 703
Number making short trips with special licensees.....		192
	<hr/>	
Grand total of travel, season of 1915.....		51, 895

The Yellowstone Park Hotel Co. reports that 27,017 people were accommodated at the hotels in the park during the season of 1915, of which 6,722 entered at the northern entrance, 20,151 at the western entrance, and 144 at the eastern entrance.

The Yellowstone Park Boat Co. reports that 4,277 people took the boat trip across Yellowstone Lake during the season, of which 1,863 were traveling with the Yellowstone Park Transportation Co., 1,699 with the Yellowstone-Western Stage Co., 589 with Wylie Camping Co., 111 with Shaw & Powell Camping Co., 4 with Holm Transportation Co., and 11 miscellaneous.

*Travel by the different entrances.*

From the west, via Yellowstone, Mont.....	32, 551
From the north, via Gardiner, Mont.....	17, 463
From the south, via Jackson, Wyo.....	331
From the east, via Cody, Wyo.....	1, 550
	<hr/>
Total.....	51, 895

The travel by way of Tower Falls by regular tourists returning to Mammoth Hot Springs from Grand Canyon was less, in proportion to total travel, than last year. The falling off in the number taking this trip, which is the most beautiful in the park, was due to a desire on the part of the transportation companies to spare their horses the pull up the mountain and the longer journey. All touring the park in automobiles took the Mount Washburn route and were most enthusiastic over the scenery.

The Wylie Permanent Camping Co. had 158 wagons in use during the season, the Shaw & Powell Camping Co. had 85 wagons in use. W. N. and O. M. Hefferlin had 42 wagons and 4 saddle horses in use transporting tourists and supplies to their 4 permanent camps in the park, and in addition movable camp licenses were issued during the season, covering a total of 43 wagons and 247 saddle and pack animals and 4 special wagons for livery work.

An inspection of the figures giving the travel for the season shows that about three-fifths of all the visitors to the park entered by the



western gateway. This was due to several causes, chief of which was the reduced rates on certain central western railways to the Panama-Pacific Exposition in San Francisco, with side trips to National Parks and other points of interest. This concentration of travel to one entrance made the task of the transportation companies operating therefrom exceedingly difficult, but with the exception of a few days when the numbers arriving were too large for all to be given transportation the traveling public was well handled.

## AUTOMOBILES.

Under instructions in connection with your announcement of April 21, 1915, that automobiles would be admitted to the park beginning August 1, such privilege to be extended to pleasure vehicles only, preparations were at once begun. Four extra first-class rangers were employed for the purpose of checking automobiles, telephone lines were extended and old ones repaired, and new telephones installed at several points along the roads where checking was necessary. On June 7 and 8 a trial trip was made by park officers and members of the transportation companies, as a result of which regulations and schedules were planned and recommended to the department, and these were printed and distributed before the opening date.

Prior to the opening date for automobiles, August 1, heavy rains throughout the West made the roads approaching and in the park heavy and difficult, yet 50 automobiles with 171 tourists entered the park on that day. No accidents to the occupants of horse-drawn vehicles due to automobiles marred this radical departure in viewing the park and the regulations and schedules worked perfectly, although travel was the heaviest in the history of the park. It was found possible to grant special schedules and night travel to those whose time was limited, and it is believed that new schedules can be added to those in force which will add to the pleasure of those touring the park in automobiles. Another season should find open to automobiles the road from Tower Falls to the northeast corner of the park, passing through the Lamar River and Soda Butte Creek valleys, by the buffalo farm and on to the lofty and rugged mountains that border the northern boundary of the park. The officers, enlisted men, and rangers had no difficulty in handling the automobile travel, and their efforts to keep cars within the schedules were met by courteous and appreciative responses on the part of the occupants.

The following table shows the total number of automobiles, and number of tourists carried by them, that have taken advantage of the opportunity to make the park trip from August 1 to the end of the season:

### *Automobile travel.*

	Automobiles.	Tourists.
Entering via the northern entrance.....	365	1,377
Entering via the western entrance.....	392	1,403
Entering via the eastern entrance.....	193	701
Entering via the southern entrance.....	8	32
Total.....	958	3,513

This travel is included in the aggregate number of tourists taking park trips, heretofore mentioned.

On April 21, 1915, authority was granted by the department to issue a permit to Robt. I. McKay, of Cooke, Mont., to transport machinery, ore, and supplies between Gardiner and Cooke, Mont., using 15 automobile trucks and 25 trailers, under proper restrictions as to schedules, etc., and to use one car as a utility or repair car, all on condition that he make certain repairs to the roads between Soda Butte and Mammoth Hot Springs, and pay a license fee of \$20 per annum for each truck used, \$10 per annum for each trailer used, and \$10 per annum for repair and utility car. Mr. McKay arrived at Gardiner about July 15 with one truck and one utility car. He deposited funds to cover license fee on these and the following morning went to Cooke with them, after having made arrangements with the engineer officer in regard to repairing the roads. Since that time he has had the truck at work in connection with the work of repairing the road between Tower Falls and Cooke, but the improvements have not progressed up to the present time sufficiently as to render it practicable to haul heavy loads over the roads with trucks, but his crews are still at work.

Hon. Stephen T. Mather, Assistant to the Secretary of the Interior, visited the park twice during the season, once before and once after the admission of automobiles.

### CONCESSIONERS.

The Shaw & Powell Camping Co. completed the work begun last season of constructing log dining rooms, kitchens, and storerooms at permanent night camps.

The Wylie Permanent Camping Co. constructed a temporary log building for use as a hospital at its Swan Lake Camp, and another at the Riverside camp which accommodates the offices and news stand, and is also used as a recreation room.

Mr. Henry J. Brothers completed his bathhouses and plunge at Upper Geyser Basin and opened them to the public on July 1. These baths have proven popular with travelers as well as with employees of the park. Mr. Brothers reports that the total number of bathers since July 1 was 7,681.

Mr. C. A. Hamilton bought the Klammer general store at Upper Geyser Basin and took charge of it at the beginning of the season.

### STREAM GAGING.

Mr. G. Clyde Baldwin, district engineer of the water-resources branch of the United States Geological Survey, with headquarters at Boise, Idaho, who has charge of this important feature, has furnished the following report on this work for the year:

Records were obtained from the following gaging stations which were established during June, 1913:

Madison River near Yellowstone, Mont.

Gibson River at Wylie Lunch Station, near Yellowstone, Mont.

Yellowstone River above Upper Falls, near Canyon Station.

Snake River at south boundary of the Yellowstone National Park.

The small allotment of funds available for this work has proved sufficient only to keep up the necessary office work connected therewith and to permit the making of one visit during the year to each

of the gaging stations. Consequently it is still impossible to compute discharges of Snake and Yellowstone Rivers for anything except low stages of flow because of the impossibility of securing high-stage measurements until cables have been installed at these stations.

Detailed descriptions of the gaging stations, together with summaries of current meter measurements, and gage height and discharge data for each will be published in the annual Water-Supply Papers of the United States Geological Survey, Parts VI and XII, respectively, for Missouri and Snake River drainage areas.

## ROADS.

The road work in the park is in charge of Maj. Amos A. Fries, United States Engineer Corps, who has furnished the following notes on the work in the park under his department:

The sundry civil bill of March 3, 1915, appropriated money as follows for road work in Yellowstone National Park and the adjacent forest reserve on the east and south:

Yellowstone National Park: For maintenance and repair of improvements, \$125,000, including not to exceed \$7,500 for maintenance of the road in the forest reserve leading out of the park from the east boundary, and not to exceed \$2,500 for maintenance of the road in the forest reserves leading out of the park from the south boundary, to be expended by and under the direction of the Secretary of War, to be immediately available: *Provided*, That no portion of this appropriation shall be expended for the removal of snow from any of the roads for the purpose of opening them in advance of the time when they will be cleared by seasonal changes.

For widening to not exceeding eighteen feet of roadway and improving surface of roads and for building bridges and culverts from the belt-line road to the western border from the Thumb Station to the southern border, and from the Lake Hotel Station to the eastern border, all within Yellowstone National Park, to make such roads suitable and safe for animal-drawn and motor-propelled vehicles, to be immediately available, \$50,000.

For completing the widening to not exceeding eighteen feet of roadway and improving the surface of roads and for building bridges and culverts in the forest reserve leading out of the park from the east boundary, to make such roads suitable and safe for animal-drawn and motor-propelled vehicles, to be immediately available, \$20,000.

In addition there remained available on October 1, 1914, about one-half of the \$255,000 appropriated for the same purposes in the sundry civil bill of August 1, 1914 (pp. 8 and 9, report of acting superintendent, September 30, 1914).

On account of early spring and the desire to expedite work in anticipation of record travel through the park during 1915, due to the combined influence of the European war and of the San Francisco and San Diego Expositions, work was vigorously prosecuted during the spring and summer of 1915 under both appropriations, and consequently almost all crews have either exhausted their apportioned funds or completed their work prior to the date of this report and have been disbanded.

The work during the year included general repair and maintenance of the entire system, including the west, south, and east approaches, both in the park and in the forest reserve on the east, and the Cooke City road; widening and improving the west, south, and east approaches, including the east forest reserve; sprinkling of 100 to 112 miles of belt line and west approach road; repair and construction of bridges; construction of concrete, wood, and galvanized-iron cul-



verts; clearing of dead and fallen timber from the roadside; reshaping and ditching roads; maintenance of trees, shrubs, vines, and lawns.

In the following summary the work will be divided into that done on the belt line, the west approach, the south approach, the east approach, the Cooke City road, and work in general.

#### **BELT LINE ROAD (INCLUDING NORTH ENTRANCE ROAD).**

*General road repairs.*—In the fall of 1914, in order to prevent excessive damage to the roads during the winter, work on a considerable portion of the belt line was done to improve the drainage, smoothing and reshaping the roads, cleaning out ditches and culverts, and constructing "thank-you-ma'ams," or water bars, on some of the steeper grades. This work extended generally from the Thumb to Gardiner, via Lake, Canyon, Norris, and Mammoth, and from Norris south toward Madison Junction. Similar repairs were made on about  $4\frac{1}{2}$  miles of the Mount Washburn road, between miles  $10\frac{3}{4}$  and  $15\frac{1}{4}$  from Canyon Junction.

Owing to continued rainy weather during the latter half of May and the first half of June, during the spring of 1915, and to the great amount of freighting being done into the park by the hotels and various transportation companies in anticipation of a large amount of travel in the park during the summer, the road in a number of places became very badly rutted and in some places almost impassable. It became necessary early in June to establish so-called drag stations at a number of the worst places, from which split-log drags were operated over the roads, thus smoothing them out, reducing the ruts, and giving the roads a chance to drain off. The same bad weather caused a large fill over the 10-foot reinforced concrete arch culvert, built in 1914 about 1,000 feet south of Canyon Junction, to slide away; and a very considerable amount of work was required to repair this damage and bring the fill up to the cross section required. Between May 20 and July 3 a flying grader squadron, consisting of four graders, was sent entirely around the belt line, shaping up the roads, cleaning ditches, cleaning out and making minor repairs to culverts. To assist in maintaining the roads during the tourist season, each sprinkler crew was equipped with a split-log drag; and whenever rainy weather gave an opportunity for so doing, these drags were used to reshape and smooth out the ruts in the roads. This process the heavy tourist traffic made very necessary.

*Gardiner slide.*—The slide in the Gardiner Canyon, about 2 miles from the north entrance at Gardiner, Mont., which has given considerable trouble to the Gardiner Road for a number of years, was cut back in the fall of 1914 and the spring of 1915, prior to the tourist season, by means of hydraulic sluicing. During the fall of 1914 a 4-inch pipe-line, fed by an electric motor-driven pump, was used to furnish the water for the sluicing; but in the spring of 1915 this was displaced by a 6-inch pipe-line, conveying a gravity stream from a lake about a thousand feet west of, and 130 feet above, the top of the slide. This latter method allowed a greater amount of material to be moved and at less cost. It is believed, however, that the slide will continue to cause trouble for several years to come and will require sluicing once or twice a year until stopped. Notwithstanding the very excellent condition of the road at this point when the sluicing was discontinued early in June, the slide has again



encroached on the road, although not sufficiently to cause any inconvenience to traffic.

*Sprinkling and dragging.*—During the tourist season of 1915 from 100 to 112 miles of road was sprinkled, including, however, a large portion of the west approach. After the continued rains of late May and early June, an excessively dry spell started in and lasted for about a month. This, coupled with the excessive evaporation due to the high altitude of the park, made it impracticable in many places during this period for sprinkling to cope with the situation and satisfactorily lay the dust. These conditions were made somewhat worse by the fact that this excessive dry period unfortunately occurred at the very beginning of the sprinkler season. When the sprinklers are first started, the men operating them are new and inexperienced, and numerous small defects that occur each year in water ditches, rams, tanks, and valves have to be remedied before the sprinkling system can attain its maximum efficiency. In the latter half of July and thereafter occasional showers occurred, however, and these greatly relieved the situation. In addition to laying the dust, the showers enabled the sprinkler crews to operate their road drags, with which all crews are equipped, as already stated under "General Road Repairs."

The length of road sprinkled was increased at the opening of the season in 1915 to 112 miles. Difficulty was experienced, however, in several places, through the water supply of tanks giving out, due, as last year, to the very light snowfall during the preceding winter. The sprinklers which run between the Thumb and the 5-mile post toward the Lake, and between the 1 and 6-mile posts from the Canyon toward Norris, had to be abandoned during August, the benefits not being sufficient to justify the cost.

Considerable experimenting was done prior to the sprinkling season with gasoline engine pumping sets, with which it was hoped to replace all hand pumps on the sprinkler wagons where pumping is necessary, thus economizing in labor and extending, without increase in cost or plant (except for the purchase of the pumping sets) the total number of miles sprinkled. These experiments have not, however, shown the gasoline sets to be sufficiently reliable to justify their actual installation in the place of the present hand pumps, as owing to the hard conditions of service and to the probably inexperienced attendance, the gasoline pumps would be out of commission a great part of the time and the sprinkling consequently often interrupted.

*Oiling Gardiner Road.*—In the spring of 1915, 1.6 miles of road inside the entrance arch at Gardiner was scarified, regraded, and treated with oil and gravel surfacing, as was also the 0.3 of a mile of branch freight road at Gardiner. For this purpose a light oil, which was left over from the preceding summer, was used, the intention being to prevent dust and avoid having to sprinkle this stretch of road. The process used answered the purpose very well, much better than the application of thin oil on the unprepared road, as experimentally done one year ago. It is not believed, however, that this stretch of road will have the wearing qualities expected from the oil and rock macadam surfacing used at the west entrance.

*Resurfacing.*—In addition to the oil surfacing at Gardiner, there were resurfaced during the year several stretches of road which had

been particularly troublesome in wet weather, aggregating about 7 miles, as follows: From about  $1\frac{1}{2}$  to  $4\frac{3}{4}$  miles from Mammoth Springs toward Norris; from Canyon Junction about 1,000 feet south to the Canyon Arch Bridge; and  $7\frac{1}{2}$  to  $10\frac{1}{2}$  miles from the Canyon Junction toward the Lake Hotel.

*Norris realignment.*—A realignment a little more than 1 mile in length was built at the Norris Geyser Basin to avoid two bad hills—one north and one south of the Minute Man Geyser.

*Bridges and culverts.*—The reinforced concrete Canyon Arch Bridge, which was built under contract, was completed and accepted on June 16, 1915. This is one of the most beautiful structures in the park—210 feet long over all, with a 145-foot arch.

In line with the policy adopted several years ago, there were built or installed this spring on the section between the Upper Basin and the Thumb, 12 reinforced concrete-slab culverts, eight being of 8-foot span and the other four of 6-foot span, and about 14 galvanized-iron culverts, mostly 18 inches in diameter, and three triple 24-inch galvanized-iron culverts, with head walls. There were also installed some galvanized iron culverts at other parts of the belt line, notably about six of 24-inch diameter on the section between the Lake and the Canyon, and about the same number on the realignment, already mentioned, at Norris Geyser Basin.

In addition, a number of wooden culverts were repaired, on all portions of the belt-line system; the wooden bridge on the Bunsen Peak Road, over the Gardiner River, and the four steel bridges between Mammoth and Gardiner were refloored; and several concrete bridges, built in 1914, were backfilled and placed in commission in time for the 1915 tourist season.

#### WEST APPROACH.

On the west approach maintenance work, similar to that on the belt line, including sprinkling, was done. In addition, the work of widening and improving the road, to make it safe for animal-drawn and motor-propelled vehicles, has been pushed to the limit of the funds appropriated for this purpose.

*Widening and grading.*—During the year widening and grading of the west approach has been extended to include all of the Madison River branch of the approach, except about  $1\frac{1}{2}$  miles (11 to  $12\frac{1}{2}$  miles from the west boundary) and about half of the Gibbon River branch. This work has involved considerable minor realignment, and some few more important relocations, including one 2,500 feet long, between 8 and 9 miles from the boundary, which avoided widening and improving a stretch of rocky hillside road and eliminated a bad climb, while going down stream, over a 30-foot hill; and one about 1,000 feet long near the junction of the Gibbon and Firehole Rivers, where the triangle connecting the roads to Yellowstone, Norris and the Fountain, was made considerably smaller, and the grade improved.

*Surfacing.*—The top surfacing being used on the west approach is an oil and rock macadam. The rock crusher on hand proving to be of insufficient capacity, an additional one was purchased and placed in operation, together with the old one, early this spring. The plant was also increased by an additional road roller and several less important items of machinery. For the storage of oil a concrete pit,

equipped with steam-heating coils, was built at the boundary, at Yellowstone, Montana, with a capacity of two cars of oil, and a track of the Oregon Short Line Railway extended to permit unloading of cars direct into the pit. A retort was also built adjacent to the pit, to heat the oil, prior to use, to a higher degree than practicable with steam.

Five miles of road at the west entrance was completed with oil-macadam surfacing during the year, although it is possible that the last three-quarters of a mile will require considerable repair next spring. The rock used on this particular stretch, although crushed from boulders which seemed of good quality, has not turned out as well as desired under rolling and the wear of traffic.

In the oil-macadam work so far done there have been used two different grades of heavy California asphalt oils, and one mile has been treated with Tarvia, experimentally, in lieu of oil. The wear of these adjacent stretches should, by the next season, give a very good comparison of the different materials used, which will be a valuable aid in further surfacing in the park.

*Firehole River realignment.*—This realignment, which will replace most of the road lying between the Madison Junction and the Firehole Cascades, was begun in June and completed for a distance of about 3,500 feet. Surveys have been made beyond this distance. This new location will greatly improve the grades and will open up a very fine stretch of river scenery, replacing with an unusually attractive road one which is quite deficient in such qualities. When this new road is completed and opened up it is believed that the main traffic will shift to it instead of passing over the Mesa Road, which, like the present Firehole River branch of the west approach, is extremely uninteresting and hilly.

The new road is for the most part in very heavy rock work, for which reason an air-compressor drilling plant has been purchased and installed, resulting in very considerable increase in speed and decrease in the cost of the work.

#### SOUTH APPROACH.

##### IN THE PARK.

In addition to general spring repairs, such as were made on the belt line, the work of widening and improving the south approach for combined horse-drawn and automobile traffic, as specially appropriated for by Congress, was continued.

*Widening and grading.*—About  $5\frac{1}{2}$  miles of road south of the Thumb has been widened and graded during the year, including a realignment about 3,000 feet long.

*Bridges and culverts.*—The 4-span log bridge over Lewis River was rebuilt, as were several other small bridges and culverts.

##### IN THE FOREST RESERVE.

*Snake River Bridge.*—The allotments for the two fiscal years 1915 and 1916 for the road in the forest reserve south of the park have been lumped for the purpose of building a 100-foot span steel bridge over Snake River. The contract for the steel and erection has been let, and the abutments have been built. The bridge will not be completed until next year.



## EAST APPROACH.

As on the belt line, general repairs were made to the east approach, both in the park and in the forest reserve, to maintain same in condition for traffic; and the work of widening and improving the road, to make same safe for both animal-drawn and motor-propelled vehicles, under the special appropriation for this purpose, was pushed as much as the money available would permit.

## IN THE PARK.

Early snows and freezing weather in the fall of 1914, and the extremely wet weather in the spring of 1915, retarded the work and increased the cost considerably on the section of the east road located inside the park.

*Widening and grading.*—This work has been brought to completion on all except about 5 miles, of which  $1\frac{1}{2}$  miles ( $9\frac{1}{2}$  to 11 miles from the Lake Junction) has been partially widened. The balance uncompleted consists of the 2 miles between the 11 and 13-mile posts and about  $1\frac{1}{2}$  miles between the 19 and 21-mile posts, which last-named stretch involves considerable rock work.

The work during the past year included grading down short hills and filling in the intervening low places, besides widening, between the 4 and  $6\frac{1}{2}$ -mile posts; widening and grading from the  $6\frac{1}{2}$  to the  $9\frac{1}{2}$ -mile points, including a 1,000-foot realignment to greatly improve the alignment and grade on the hill eastward from Turbid Lake; partially widening and grading between the  $9\frac{1}{2}$  and 11-mile posts; a  $1\frac{1}{4}$ -mile relocation of the road at the crossing of Cub Creek, about  $13\frac{1}{2}$  miles from the Lake Junction, where the old road was in a bad location on the creek bank, and subject to serious slides (it was here considered better and more economical to build a new road on nearly level benches farther from the creek than to improve the old road); and widening and grading between the 14 $\frac{1}{2}$  and 18-mile posts (including a 1,000-foot realignment at the highest point on the east road near the 15-mile post from the Lake) and between  $20\frac{1}{2}$  and  $23\frac{1}{2}$  miles from the Lake.

*Graveling.*—The road was graveled over about one-quarter of a mile between the Lake Junction and the Yellowstone River bridge; over the 2 miles between the 3 and 5-mile posts from the Lake Junction, and for 1 mile between the 7 and 8-mile posts from Lake Junction. Both of the first two stretches needed graveling very badly, having during the rains of May and June this year become all but impassable.

*Turnout at Lake Junction.*—A turnout was built at the Lake Junction, completing a triangle at this point and connecting the east road with the branch of the belt line leading to the north or in the direction of the Canyon. Previously the junction had consisted of a single turnout from the east approach to the south branch of the belt line, making the turn for traffic from the north belt line onto the east road so sharp that freight wagons could not make it, but were compelled to pass to a point beyond where they could turn completely around and then enter the east road from the south.

*Bridges and culverts.*—A new log bridge of 20-foot span was built at the crossing of the realignment over Cub Creek. The bridge at



the outlet to Turbid Lake, about  $6\frac{1}{2}$  miles from Lake Junction, was rebuilt, the elevation of the bridge and approaches being made 5 feet higher than originally, thereby eliminating the former sharp descent to the bridge. Minor repairs to other bridges were made where necessary, and a number of galvanized-iron culverts were installed in connection with the other work of improvement. The viaduct or loop bridge on the east slope of Sylvan Pass needs replacing, and the work of so doing has been begun, but will not be completed until next year, work now having been suspended.

#### IN THE FOREST RESERVE.

*Widening, grading, and surfacing.*—During the year about 22 miles of the east approach was widened and graded, and surfaced where needed, making a total of 25 miles completed and leaving  $2\frac{1}{2}$  miles (between the 6 and  $8\frac{1}{2}$ -mile posts from the park boundary) yet to be improved. A large amount of very heavy rockwork was involved in this section, especially the half farther from the park. The work also included several realignments as follows: One about one-quarter of a mile long, 900 feet of which was along a rock cliff,  $2\frac{1}{2}$  miles from the park boundary; one 6,000 feet long at Holm Lodge and Libby Flats, between 8 and 10 miles from the boundary; and one about 1 mile long at the location of the new steel bridge over the North Fork of Shoshone River,  $21\frac{1}{2}$  miles from the park boundary.

*Steel bridges.*—Contracts were let for the steel and erection of three low curved top chord-steel bridges, 100-foot span each, with riveted joints, located as follows: Two over the North Fork of the Shoshone River, 2 and  $21\frac{1}{2}$  miles, respectively, from the park boundary, and one over Elk Fork, 23 miles from the boundary. The concrete abutments and floors of these bridges are being built by the Government. At this date the Elk Fork bridge is practically completed except for the floor, and the abutments for the two bridges over the North Fork are about half completed.

*Other bridges and culverts.*—Minor repairs were made where necessary to other bridges and culverts, and a number of galvanized iron culverts were installed in connection with the other work of improvement.

#### COOKE CITY ROAD.

*General improvement.*—The work begun last year of widening and improving the road leading from Tower Falls to the northeast boundary, known as the Cooke City Road, was continued during the summer of 1915. The road was widened for about 4 miles and graveled an aggregate distance of about 2 miles, where most needed; and about 65 log bridges and culverts of various spans were installed. About 7 miles of road, beginning at the northeast boundary, has now been placed in very fair condition.

*Work by Robert I. McKay.*—In addition to the work done at Government expense on the Cooke City Road, there has been some work done by Mr. Robert I. McKay and associates, who have considerable mining interests at Cooke City, Mont., about 4 miles outside the northeast boundary. As Mr. McKay has a permit from the Interior Department to operate motor trucks and trailers through the park from Cooke City to Gardiner, Mont., for the purpose of

hauling ore, machinery, etc., he and his associates are interested in the upkeep and improvement of the road. The principal work done by these interests to date consists of a realignment, 3,600 feet long, around what is known as the Ash Grade and S Hill, between 8 and 9 miles from the northeast boundary. This realignment slightly shortened the road and eliminated a hill with a 130-foot climb, having an average road grade of about  $6\frac{1}{2}$  per cent and a maximum grade of about 19 per cent. The work included the removal of considerable rock, boulders, gravel, etc., by blasting, the building of some crib retaining wall, and the construction of a 10-foot log bridge and five 3-foot and three 4-foot log culverts. In addition, some work was done not on the realignment mentioned, including the building of two log culverts of about 4-foot span each, and the replacing of a 21-foot span log bridge over Lost Creek, a short distance beyond Tower Falls toward Cooke City. At present work is being done by Mr. McKay and his associates on a realignment around a bad hill west of Pebble Creek, about 11 miles from the northeast boundary, on a realignment between the Soda Butte flat and the Jackson grade, about  $14\frac{1}{2}$  miles from the boundary; and on graveling considerable portions of the road.

#### WORK IN GENERAL.

*Telephone lines.*—The opening of the park to automobiles on August 1 made essential an improved telephone service throughout the park. Sixty-three miles of new single-wire telephone line was built by the Engineer Department, which is being paid for by the Interior Department. There was repaired or rebuilt, in addition, 75 miles of telephone line, also at the expense of the Interior Department, excepting a small portion which was paid for by the Engineer Department.

*Checking stations.*—There were built during the year, for the use of and at the expense of the Interior Department, three automobile checking stations, of log construction, located, respectively, at the west entrance, at the Madison Junction,  $13\frac{1}{2}$  miles from the west entrance, and at the north junction of the Mount Washburn and Dunraven Pass Roads.

*Automobile truck.*—In line with the opening of the park to automobiles on August 1, 1915, there was purchased by the Engineer Department a 5-ton automobile truck. This has effected a large saving in the cost of the freight hauled by the truck. With the hoped-for extension next year of this method of transportation there will be effected a very considerable economy in the matter of hauling freight, which has always been a serious item in the costs of work done in the park.

*Storehouse at Madison Junction.*—A substorehouse for the Engineer Department, 108 feet long by 38 feet wide, of log construction, was built during the summer of 1915 at the junction of the Firehole, Gibbon, and Madison Rivers, about  $13\frac{1}{2}$  miles from the west boundary, to be used principally for the storage of forage purchased in the fall, when the prices are most reasonable.

*Gasoline storage tank.*—Owing to the large increase in the amount of gasoline engine-driven plant it became advisable to build a 10,000-

gallon capacity steel storage tank at Mammoth Hot Springs, thus enabling gasoline to be purchased by the tank carload, and saving about 35 per cent over the cost of the same when purchased in barrels or drums.

### FISH.

The usual season's work of collecting eggs of the black-spotted trout and distributing them from the subhatchery on Yellowstone Lake to points throughout the United States was continued under the direction of the superintendent of the United States hatchery at Bozeman, Mont., Mr. W. T. Thompson, who also furnished trout for planting in park waters as follows:

May 11, 1915, 15,000 eastern brook trout in Blacktail Deer Creek, and the same number on the same date in Obsidian Creek. The usual plants of the surplus black-spotted trout were also made in park waters adjacent to the lake.

A pamphlet on "The Fishes of the Yellowstone National Park," Bureau of Fisheries, Document 818, printed in 1915, has been furnished for distribution during the past season and has proven a very popular and useful document to those interested in fishing in the park.

### WILD ANIMALS.

Frequent rains throughout the summer, causing constant growth of grass, provided an abundance of pasture for all kinds of herbivorous animals. And on account of the cool weather due to the rains, elk, deer, and antelope remained in lower altitudes than usual, and were consequently often seen by tourists along the regular stage routes.

### ANTELOPE.

The woven-wire fence along the north line of the park near the northern entrance kept the antelope from leaving the park by drifting down the Yellowstone River, as they are inclined to do during severe storms if allowed to follow their own instincts. They were fed whenever necessary during the winter from the alfalfa hay raised on the field near the entrance arch, and while the winter was so open and the herd so scattered that an accurate count was not secured they were all in fine condition in the spring, and there is no doubt that there was a normal increase in the herd. Last fall there were 192 tons of alfalfa hay on hand for use during the winter in feeding the antelope, mountain sheep, and deer. As the winter was very mild it was necessary to feed but 80 tons, leaving 112 tons that were carried over to this year. During the summer the 45½-acre field has been kept watered and has been cut twice and the hay, amounting to 82½ tons, stacked for next winter. A part of the field has grown up enough so that it will be cut again, so there are something over 200 tons of hay in stack for the coming winter. This field was cared for and hay cut and stacked under contract this season at a cost of \$5 per ton for the hay in stack. The same work cost \$6.09 per ton season of 1914.



## DEER.

While due to the open winter the deer were not in evidence in large herds as they are sometimes found, there seemed to be at least the usual numbers of both black-tailed and white-tailed varieties, and they were in splendid condition all winter. Deer are frequently killed in open season by hunters several miles outside of the park, and I am convinced that many of them stray over the boundaries of the park annually.

## ELK.

The weather was so mild and there was so little snow in March and April that the elk went up to high ground earlier than usual, and it was impracticable to take an accurate census of them. They were all in splendid condition, however, and careful estimates by experienced men placed the increase in the northern herd at 10 per cent and the decrease from natural causes at 3 per cent. Taking this into consideration, and deducting 375 elk shipped out of the park under authority of the department during the winter of 1914-15 leaves an estimated total of 37,192 in the herd. Those shipped were consigned as follows: January 25, 2 crated by express to the city park at Columbia, S. C.; January 27, 4 crated by express to the park commissioner, Borough of Queens, N. Y.; January 29, 3 crated by express to the mayor of St. Joseph, Mo.; February 12, 50 in 2 cars by freight to the State game warden of New Mexico; February 15, 50 in two cars by freight to the State of Montana; February 19, 50 in two cars by freight to the State of Idaho; February 21, 50 by express in a large express car to the State of South Dakota; February 24, 2 by express, crated, to Little Falls, Minn.; February 26, one car of 25 by freight to the State of Michigan, one car of 30 yearlings by freight to the State of Wisconsin, and 4 for the New York Zoological Society in the car by freight with elk for Michigan as far as St. Paul where they were crated and shipped the balance of the journey by express; March 3, 50 in a large car by express to the State of Colorado by the United States Biological Survey; March 5, one car of 25 by freight to the State of Utah by the United States Biological Survey; and the last shipment, on March 12, of one car of 30 by freight to the State of Minnesota. Allotments of elk for some other States were not filled on account of quarantine regulations for foot-and-mouth disease, which was prevalent in various sections during the winter. Unusual difficulty was found in capturing the elk wanted for shipment, as they did not come down for hay, on account of the warm winter. The experiment of shipping elk in carload lots by express, in the cases of South Dakota and Colorado, proved very satisfactory, as the animals receive better care than when shipped by freight, are not so long on the road, and with 50 in one large car the cost of shipping should not be much greater than if shipped in carloads of 25 by freight. In shipping by freight, rough handling of the cars by the railroads often results in considerable loss. Mr. F. M. Dille, who had charge of the shipment of the allotments made through the Department of Agriculture, is of the opinion that the method of shipment by express is far better than by freight. The presence of several bands of wolves has recently been noted on the elk ranges,



and it is feared that they will kill many of the calves. Arrangements are now being made to systematically hunt the wolves and coyotes in the park.

### MOOSE.

Moose are frequently seen in various sections of the park. They are reported as thriving and increasing in numbers.

### BUFFALO.

#### WILD HERD.

Little has been seen of this herd for the past two years, and it has not been practicable to get an accurate count of them.

#### TAME HERD.

The tame herd, which is kept on Lamar River near the mouth of Rose Creek, 30 miles east from headquarters, has been in the best of condition during the year. This herd now numbers 239 animals, as follows:

	Males.	Females.	Total.
Number Oct. 1, 1914 (last report).....	96	97	193
Born in No. ember, 1914.....	1	.....	1
Born summer of 1915.....	28	21	49
Total to account for.....	125	118	243
Died or disposed of during the year.....	3	1	4
Balance now in the herd.....	122	117	239

Of those disposed of one 5-year-old bull was donated by the department to the city of St. Joseph, Mo., and shipped at the expense of the city on January 4; one 6-year-old bull was killed in the herd April 5; one yearling bull was found dead on the range, apparently from eating poisonous weeds, the latter part of June, and one 6-year-old cow died September 17.

The herd is kept out on the range most of the time during the summer months. Several attempts have been made to drive a number of the old bulls out to the range of the wild herd and to get them together, but they always return to the main herd. The usual show herd of 15 bulls was brought in to Mammoth Hot Springs on June 15 and returned to the main herd on September 20. At the present rate of increase in the herd it will soon become necessary to dispose of a large number of them or provide additional facilities for their care. The herd would be in much better shape if at least a hundred of the bulls could be disposed of. About 200 acres of meadow land was kept watered during the summer, and the hay was cut and stacked in August, yielding about 150 tons, at a cost for cutting and stacking of \$5.08 per ton. About 70 tons of last year's crop of hay is still on hand, and it is expected that 20 to 30 tons of good hay will be cut and stacked from a field sowed to oats last spring. This will insure an adequate supply of forage for the winter. Last winter being an open one, it was not necessary to begin feeding hay until January 26.

**FOLDOUT BLANK**



### • BEARS.

But few complaints were received during the summer of depredations by bears. Travel being heavy they found an ample supply of food at the garbage dumps near hotels and permanent camps, and therefore did not have to resort to stealing from ice boxes and camper's supplies, as is sometimes the case. Two bears had to be killed during the summer to protect life and property.

A 5-year-old male grizzly bear was captured at Grand Canyon and shipped alive on November 2, 1914, to the Board of Park Commissioners at Kansas City, Mo., at their expense. Two grizzlies, male and female 2-year-olds, were captured at Grand Canyon and shipped to the city of Los Angeles, Cal., on September 16 at the expense of the city.

### COYOTES AND WOLVES.

Coyotes are numerous, although they are much hunted during the winter by employees on duty in the park. About 100 were killed during the year. Gray wolves are increasing, and have become a decided menace to the herds of elk, deer, mountain sheep, and antelope. Several were killed in the park last winter, and an effort will be made the coming winter to capture or kill them.

### MOUNTAIN LIONS.

Mountain lions are numerous and are in evidence during the winter, when their tracks are found in abundance in the vicinity of the large herds of elk. None were killed last winter, as there was not enough snow to track them to cover.

### MOUNTAIN SHEEP.

The mountain sheep, like the deer and antelope, were considerably scattered during the winter, as the weather was mild, grass plentiful, and there was scarcely any snow to drive them down to the lower altitudes. They were apparently plentiful and wintered in excellent condition.

### OTHER ANIMALS.

Other smaller animals usually found in this altitude, such as beaver, foxes, lynx, otter, marten, etc., are frequently seen.

### BIRDS.

Many kinds of birds are found in the park, and all, more particularly those classed as game birds in the States, are noticeably tamer than they are outside of the park. They, as well as many of the wild animals, seem to know where the park lines are located, although many hunters have complained that these lines are not marked plainly enough. The interest of travelers in bird life in the park has increased noticeably since the publication of a list of the names of birds found in the park in the circular of information which is generally distributed to all.



### PROTECTION OF GAME.

The question of game protection in the park has been much simplified of recent years by the hearty cooperation of the authorities of the adjoining States and of the officials of the national forests which adjoin the park on all sides. The States also establish game preserves in many places adjoining the park, changing their boundaries as conditions demand. Last winter the Montana Legislature withdrew from the game preserve that section immediately west of the northwest corner of the park, thus opening up a good hunting region for elk and deer, but still retain as a preserve that section just north of the park extending from the northwest corner to the mouth of Gardiner River. It also extended the season for hunting elk and deer to December 15, so as to enable those who depend upon the fall hunt for a winter supply of meat to get it late enough in the fall so it will not spoil. Hunting has been very poor during the last two seasons, as cold, stormy weather did not come in time to drive the elk down before the close of the hunting season. Last winter the Wyoming State Legislature set aside a large part of the area east of the park as a game preserve.

Additional scouts were employed during the hunting season in adjoining States, and several arrests were made; but in few cases were the parties indicted, and under the present law it is an expensive and difficult process to prosecute offenders, as under a decision of the Attorney General the United States commissioner in the park can not dispose of a case but can only hold violators of the park laws to trial before the United States district court. In most cases where evidences of depredations were found the guilty parties were discovered and brought to trial. One violator of the law—a soldier who was a member of the detachment stationed in the southwest corner of the park—pleaded guilty to the charge of killing an elk in the park, before a general court martial, and was sentenced: "To be dishonorably discharged the service of the United States; to forfeit all pay and allowances now due, or to become due while in confinement under this sentence; and to be confined at hard labor at such place as the reviewing authority may direct for one and one-half years." The United States Disciplinary Barracks, Alcatraz, Cal., was fixed by the reviewing authority as the place where the sentence would be served.

Seventeen snowshoe cabins were put in repair and supplied for the use of patrols traveling on skis during the winter.

### VIOLATIONS OF LAW.

Several violations of law were discovered, in addition to those protecting game, and in many cases arrests have been made.

In February, the evening of the first or morning of the second, some miscreant cut the high woven-wire fence on the north line of the park, about  $3\frac{1}{2}$  miles west from the entrance arch. Tracks of a man were found leading away from the point where the fence had been cut, but it was impossible to fix the blame. On the evening of February 3 some one went to the pens, at the haystacks on the flat, in sight of the town of Gardiner, and killed five of the elk that had been captured for shipment. It was apparent that the elk had been killed

with a large knife tied to a long stick, from the outside of the pen. As scarcely any of the meat had been taken, it appeared likely that the work was done by some one for spite, possibly by the same persons who cut the fence. Efforts were made to fix the blame, but so far they have been fruitless.

A highway robbery occurred about 10 o'clock a. m., July 9, at a point about a mile south of Madison Junction, on the road toward Fountain. The day was very rainy; and being one of the days of heavy travel from the western entrance, about 12 miles of passenger vehicles were in the line leaving Yellowstone that morning. After one vehicle had passed without being molested five were held up and the passengers forced to give up some of their money. The robber, who was masked and carried a rifle, was described by all who saw him as evidently an amateur in the business, and he was doubtless frightened away before he had completed the job by seeing a man from one of the rigs pulling up from the rear drop off, and go back on the road to give the alarm. Had he continued a few minutes longer he would have been captured in the act, as soldiers were at the scene within about half an hour. The alarm was at once given and all available men from stations and scouts from headquarters were at once sent out, some to the scene of the holdup to try and pick up some trail or bit of evidence and others to cover trails, roads, etc., leading out of the park. The country was searched for two days for several miles around, but not a trace or clue was found. This, however, might easily have been due to the excessive rain that day, which completely obliterated all tracks. Suspicion rested on some near-by road camps, where many men of unknown character were employed as laborers, and as they did not work the morning of that day on account of the rain it was a difficult job to check and account for them. Later the Department of Justice sent detectives to the scene, who still have the matter in hand and are following clues. The total amount secured by the robber is less than \$200.

Through the efforts of the secret-service men of the Department of Justice a man is now being held in jail charged with the crime of holding up the coaches in the park on July 29, 1914, and it is believed that the evidence is strong enough to convict him.

### SANITATION.

During the tourist season frequent inspections of hotels and camps were made by officers of my command with a view to keeping them in the best possible condition of cleanliness. Two men with a two-horse team and wagon were kept on the move all summer keeping the camping grounds in a sanitary condition and caring for the earth closets maintained for public use throughout the park.

Since the admission of automobiles on August 1, a demand has been created for special sanitary camps for parties traveling in private automobiles and carrying their own camp equipment. The regular camps are selected with a view to providing grazing for horses, which also need to be kept at some distance from hotels and permanent camps. A separate set of camps, about three in number, located at Mammoth Hot Springs, Upper Geyser Basin, and Grand Canyon, not too far from the points of interest and provided with a few conveniences, would be appreciated by those who travel in their own automobiles, and as the

automobile tickets of passage, for which a charge is made by the department, are a source of considerable revenue, it seems that an expense for this purpose is warranted.

### FOREST FIRES.

Almost constant wet weather during the past summer prevented danger at any time of forest fires, and in few cases were the usual summer fire patrols considered necessary.

### IMPROVEMENTS.

*Fire lanes.*—The crew of men constructing fire lanes in the southeast corner of the park last fall completed about 10 miles of new fire lanes, as far as the crossing of the Yellowstone River, when they discontinued the work on account of bad weather. A total of 31 miles of fire lanes were constructed season of 1914, at an average cost of \$60.20 per mile. About June 1 a crew was again put into the field, and during the month of June went over and repaired 75 miles of old fire lanes at an average cost of \$18.34½ per mile, the high rate being due to the fact that one of the fire lanes repaired—the one from Soda Butte Creek up Lamar River and down Pelican Creek to Mary Bay, 48 miles in length—had not been repaired for several years and needed more work than usual. Since July 1 this crew has repaired 154 miles of fire lanes at an average cost of \$10.23 per mile, and built a new fire lane from the crossing of the Upper Yellowstone River west as nearly as practicable along the south boundary, to connect with the one built last season, 6 miles northeast of Snake River Station, a total of 27 miles, at a cost of \$32.12 per mile. All fire lanes were gone over and repaired during the season, except the one from Snow Pass to the Gallatin road, through Fawn Pass, a distance of 24 miles.

The wire fence around the pasture at Mammoth Hot Springs, used in summer for the show herd of buffalo bulls, was repaired in April and May, requiring 70 new cedar posts to replace those that had rotted off. Two thousand seven hundred feet of this fence was taken down and moved in, to get it away from the stage road from Tower Falls to Mammoth, and this required 135 new posts. Due to change of location, it took 3,000 feet of fencing to replace the 2,700 feet taken down. Most of this work was done by regular employees.

A new log house was built at the mouth of Rose Creek on Lamar River, for use of the buffalo keeper. It is built of logs with shingle roof, finished inside with beaver board. The main part is a one-story building 30 by 30 feet, with porch over the front door, brick chimney in the center, and is divided into dining room 15 by 15 feet, living room 15 by 15 feet, and three bedrooms each 10 by 15 feet. Built on the same line in front is an addition 12 by 14 feet, one story built of logs, with brick chimney, and porch on the back side over the door. This work has all been done by park employees, in addition to their regular duties, and has only recently been completed. The cost of the material was \$654.19.

*Telephone lines.*—Under a decision by the Comptroller of the Treasury that the Interior Department may improve and extend the park telephone system which was built at the expense of the War Depart-



ment, the sum of \$10,000 was allotted for the extension and repair of the system, in connection with the opening of the park to automobiles.

The engineer officer in charge of road improvements in the park found that he was badly in need of efficient telephone service in connection with his work of building and repairing roads, and he was permitted to install telephones on the park line at all of his principal road camps in the park, greatly facilitating his work. He also secured a small allotment of funds from the road appropriation for keeping up the line, and he has kindly had all of the work on the lines done by his crews, under his supervision and mine, bills to be paid by this department except for a small portion which is covered by his allotment. By this cooperation, expense is reduced, and the telephones installed in the road camps are also frequently very convenient for use of our patrols in making reports and in checking automobiles. It was over a telephone in one of the engineer camps that the first news of the holdup of July 9 was received at headquarters, several minutes earlier than it would have been received from the nearest soldier station.

The material necessary for the extension and repair of these lines was purchased by special authority from the Signal Corps of the Army, at a minimum figure, and shipped on a Government bill of lading from Omaha, Nebr. The work completed during the summer was as follows:

A new line from Norris, via Canyon to Lake Outlet, 27 miles, at a cost of about \$120 per mile. A new line from the western entrance of the park to Firehole Cascades, where it connects with the Norris-Upper Basin line, a total of about 16½ miles, at an approximate cost of \$172 per mile for the first 9½ miles from the west boundary, and about \$119.50 per mile for the remaining 7 miles. A new line from Canyon to Tower Falls Soldier Station, about 20 miles, at a cost of about \$106 per mile. The building of these new lines made the Government lines, which had heretofore been carried on poles of the hotel company between Norris and Lake Outlet, and on the poles of the Yellowstone-Western Stage Co. to the west boundary, entirely independent, and established communication between Canyon and Tower Falls via Dunraven Pass, necessary in checking automobiles. Repairs were also made to telephone lines as follows:

Norris to Upper Basin, about 29 miles, at an approximate cost of \$52 per mile. Thumb to Lake Outlet, about 16 miles, at an approximate cost of \$60 per mile. About 12 miles of the line east from Lake Outlet toward Sylvan Pass Station, at an approximate cost of \$72.50 per mile. And the line from Tower Falls Station to Headquarters, 18 miles, at an approximate cost of \$44.60 per mile. No repair work was done on the balance of the Sylvan Pass line, on the line from Thumb to Bechler Station via Snake River Station, or from Swan Lake flats to Gallatin Station, except slight repairs made by park employees or enlisted men. The lines from Fort Yellowstone to Gardiner, and from Fort Yellowstone to Norris have been kept in repair by enlisted men.

*Checking stations.*—Under allotments from park revenues, stations for checking automobiles were constructed as follows: A log building 14 by 14 feet at the west boundary entrance, with tarred paper and gravel roof, at an approximate cost of \$200; a similar building at a cost of about \$100 at the north end of Dunraven Pass about 11 miles



from Canyon Junction; and a log building 14 by 28 feet inside measurements, with shingled roof, at Madison Junction, 14 miles from the west boundary, at a cost of about \$250. The engineer officer also kindly had this work done by his crews who were on the ground, thus saving considerable expense of moving special crews out long distances to those points. Additional checking stations were authorized, but were not found necessary during the short season for automobiles since August 1. The Engineer Department buildings at Beaver Lake, between Fort Yellowstone and Norris, and at De Lacy Creek, between the Upper Basin and Thumb, were also used as checking stations.

With permission of the department, the Engineer Department built a short spur of railroad track into the park from the Oregon Short Line Railroad depot at Yellowstone, Mont., for the purpose of switching and unloading road oil into their storage tank at that point.

The military authorities have torn down and destroyed the old barracks and stables originally known as Camp Sheridan, located close to the road opposite Jupiter Terrace, thereby greatly improving the appearance of the landscape at that point.

### NATURAL PHENOMENA.

Few changes of any importance have been noted in the geysers, hot springs, etc., during the past year.

An earthquake was noted at 7.55 a. m. on May 8. Three distinct shocks were noticed at Grand Canyon and Tower Falls, and one was noticed at Mammoth Hot Springs. No damage was done.

### CONCESSIONS.

CONCESSIONERS HOLDING PRIVILEGES FOR A YEAR OR MORE IN YELLOWSTONE NATIONAL PARK UNDER EXISTING CONTRACTS, WITH RENTALS AND OTHER TAXES EXACTED.

*Yellowstone Park Hotel Co.*—Contracts (two) dated February 26, 1913, run for period of 20 years, and grant to company right to use certain land in the park and erect and maintain thereon hotels and necessary buildings connected therewith.

Annual rental: Forty dollars per acre on 29.44 acres, \$1,177.60. News-stand privilege at hotels and lunch stations, \$750. Usage tax, 1915, 25 cents per capita on guests during 1915 season, \$6,722.

*Yellowstone Park Transportation Co.*—Contract dated February 26, 1913, runs for period of 20 years, and authorizes company to establish and maintain a stage and transportation line and agrees to lease necessary land at eight designated sites on which to construct and maintain buildings required for accommodation of stock, carriages, employees, etc.

Annual rental: Forty dollars per acre on 27.16 acres, \$1,086.40. Usage tax, 1915, 25 cents per capita on passengers carried during 1915 season, \$1,635.25.

*Yellowstone Park Boat Co.*—Contract dated February 7, 1913, runs for 10 years, and lease dated May 19, 1914, for 9 years from February 7, 1914, grants to company privilege of maintaining, operating, and conducting on Yellowstone Lake and such other park lakes as may be designated, motor boats and launches, motor vessels, rowboats, and dories for accommodation of tourists, with right to sell and rent fishing tackle and sell fruits, nuts, confectionery, books, periodicals, cigars, tobacco, and camping supplies, and lease or sell bathing suits. Contract agrees to lease lands on shores of Yellowstone Lake on which wharves and ways are constructed, and at other points to be agreed upon on which to erect buildings for storage of equipment, accommodation of employees, etc.

Compensation for boat privilege, \$100 per annum. Annual rental on 1.8592 acres, at \$40 per acre, \$74.37.

*Wylie Permanent Camping Co.*—Contract of May 4, 1906, runs for 10 years from March 31, 1906, and grants transportation privilege in park, with sites for maintenance of permanent camps therein, and right to conduct lunch stations at points near Gibbon River and West Thumb of Yellowstone Lake.

Annual rental: Ten dollars per wagon (not less than 50 to be used) on 158 wagons used during 1915 season, \$1,580. News-stand privilege at permanent camps, \$500. Usage tax, 1915, 50 cents per capita on passengers carried during 1914 season, \$2,376.50.

*Shaw & Powell Camping Co.*—Special permanent camping license issued April 19, 1913, and running for a period of one year from May 1, 1913, or until such time as may be revoked, authorizes it to maintain, conduct, and carry on the business of transporting tourists in and through the park and provide for their accommodation at permanent camps to be established on sites at designated points in the reservation and to maintain a lunch station on Madison River between the present Wylie camp and the State line.

Annual rental: Ten dollars on each wagon used (75 passenger and 10 freight wagons used 1915 season), \$850. News-stand privilege at permanent camps, \$100. Usage tax, 1915, 25 cents per capita on passengers carried during 1914 season, \$606.25.

*Holm Transportation Co.*—Contract entered into March 14, 1913, with company for the period of one year from and after March 31, 1913, authorizes the establishment and maintenance of a stage and transportation line in the park, with the right to use and occupy such parcels of land as may be necessary at or near designated points therein on which to construct and maintain suitable buildings and inclosures for accommodating stock, carriages, and employees. Supplemental agreement entered into with company on January 23, 1914, extending the contract further for a period of three years from March 14, 1914.

Annual rental: Forty dollars per acre on approximately 1.915 acres, \$76.60. Usage tax, 1915, 25 cents per capita on passengers carried during the 1915 park season, \$36.

*George Whittaker.*—Contract dated March 13, 1913, for period of 10 years, grants use on 24,000 square feet of land at or near Mammoth Hot Springs, with privilege of maintaining a dwelling, store, and post office.

Annual charge, \$100. Usage tax, 1914, \$800 per annum. Total, \$900.

*Yellowstone-Western Stage Co.*—Contract dated January 26, 1915, authorizing, for the term from January 1, 1914, to December 31, 1915, establishment and maintenance of a stage and transportation line, and permitting the use of certain parcels of land in connection with such privilege, aggregating 13 acres, together with use of buildings located thereon, approximately 47 in number, for accommodating stock, carriages, and employees.

Rental for period of contract: Forty dollars per acre on 13 acres, \$520. For use of buildings, \$2,500; 25 cents per capita tax on passengers carried during 1915 park season, \$4,934.25.

*Pryor & Trischman.*—Contract dated August 26, 1908, running for period of eight years, from April 3, 1908, issued to George R. and Anna K. Pryor, interest of former transferred to Elizabeth Trischman through assignment approved by Department of the Interior October 29, 1912, grants use of tract of land near Mammoth Hot Springs in park, containing 13,800 square feet, on which to maintain dwelling, store, and soda fountain.

Annual rental, \$50; usage tax of \$115 per annum. Total, \$165.

*C. A. Hamilton.*—Contract dated November 23, 1914, running for a period of three years, from August 13, 1914, issued to Mary R. Klammer, widow of Henry E. Klammer, and by her transferred through assignment approved by Department of the Interior June 25, 1915, authorizes use of 2-acre tract of land at or near Upper Geyser Basin, with privilege of maintaining thereon building or buildings for use as dwelling and conduct of a general store.

Annual rental, \$100; usage tax, \$1,200 per annum. Total, \$1,300.

*F. Jay Haynes.*—Contract of May 25, 1914, for period of three years from April 1, 1914, authorizes use of 0.64 acre of land at Mammoth Hot Springs and 1 acre at or near Upper Geyser Basin, with privilege of maintaining buildings thereon for the preparation and sale of photographic views. Contract also agrees to lease not to exceed 1 acre of land at or near Grand Canyon for buildings for photographic purposes.

Annual rental: Forty dollars per acre on 2.64 acres, \$105.60. For privileges accorded, \$1,000 at Mammoth Hot Springs, \$1,000 at Upper Basin, and \$500 at Grand Canyon. Total, \$2,605.60.

*Henry J. Brothers.*—Contract of July 1, 1914, for a period of 10 years from same date authorizes use of approximately  $2\frac{1}{2}$  acres of land, at \$40 per acre, \$100, to be leased to him at Upper Geyser Basin, with privilege of maintaining bathhouse and bathing pools. Compensation for bathhouse privilege, \$200 per annum.

Annual rental, \$40 per acre for land leased; also \$200 for privilege. Payments to begin one year from time bathhouses opened to public July 1, 1915.

*Personally conducted camping party and special licenses issued in the Yellowstone National Park during the season of 1915.*

## ENTERING AT NORTHERN ENTRANCE.

Name of licensee.	License No.	Usage tax (25 cents per capita on passengers carried 1914 season).		Amount paid, special licenses issued (1 wagon each).	Number of wagons, at \$10 each.	Number of horses, at \$2 each.	Total paid.
		Number carried.	Amount paid.				
S. E. and E. J. Larson.....	15, 16	22	\$5.50	-----	3	1	\$37.50
O. O. Rosenborough and H. P. Grant <sup>1</sup> .....	21, 24	93	23.25	-----	11	-----	133.25
Bert Stewart and J. McPherson.....	12, 17	-----	-----	\$25.00	1	-----	35.00
Howard Eaton.....	10, 11, 43, 44	63	15.75	-----	4	51	157.75
Chas. G. Davis.....	35	-----	-----	25.00	-----	-----	25.00
E. L. Robertson.....	22	-----	-----	25.00	-----	-----	25.00
Do.....	23	-----	-----	15.00	-----	-----	15.00
Total.....	-----	178	44.50	90.00	19	52	428.50

## ENTERING AT NORTHERN AND WESTERN ENTRANCES.

W. N. and O. M. Hefferlin <sup>2</sup> .....	8, 9	110	\$27.50	-----	42	4	\$455.50
B. D. Sheffield.....	1, 37, 38	33	8.25	-----	3	3	44.25
Total.....	-----	143	35.75	-----	45	7	499.75

## ENTERING AT WESTERN ENTRANCE.

T. E. Newcomb.....	29	4	\$1.00	-----	-----	18	\$37.00
Joe Clause.....	13, 14	32	8.00	-----	3	2	42.00
Total.....	-----	36	9.00	-----	3	20	79.00

<sup>1</sup> Roseborough and Grant had special permission to erect a permanent storage camp at Apollinaris Spring, but did not avail themselves of it.

<sup>2</sup> W. N. and O. M. Hefferlin had special authority for season 1915 for four permanent camps for their patrons, which they erected and operated.

## ENTERING AT EASTERN ENTRANCE.

Name of licensee.	License No.	Usage tax (25 cents per capita on passengers carried 1914 season).		Number of wagons, at \$10 each.	Number of horses, at \$2 each.	Total paid.
		Number carried.	Amount paid.			
J. W. Howell.....	39, 40	-----	-----	1	6	\$22.00
Frederick Morris.....	41, 42	9	\$2.25	1	8	28.25
H. Mullendore.....	2, 3	-----	-----	2	2	24.00
Will B. Shore and Geo. T. Hopkins.....	6, 7, 20, 25, 30	40	10.00	5	28	116.00
N. W. Frost and Fred J. Richard.....	34	-----	-----	-----	9	48.00
W. H. Jordan.....	4, 5, 46	41	10.25	1	9	38.25
E. C. Brown and Simon Snyder.....	18, 19	26	6.50	5	20	96.50
Total.....	-----	116	29.00	15	97	373.00

## ENTERING AT SOUTHERN ENTRANCE.

C. E. Carrington.....	36	-----	-----	-----	12	\$24.00
James S. Simpson.....	26, 27	-----	-----	1	6	22.00
Chas. C. Moore.....	31, 32	15	\$3.75	2	14	51.75
S. N. Leek.....	33	5	1.25	-----	11	23.25
Total.....	-----	20	5.00	3	43	121.00

## ENTERING AT SOUTHERN AND EASTERN ENTRANCES.

Joe A. and M. G. Jones and Joseph McGill.....	28, 45	3	\$0.75	-----	32	\$64.75
Total.....	-----	3	.75	-----	32	64.75



*Personally conducted camping party and special licenses issued in the Yellowstone National Park during the season of 1915—Continued.*

## SUMMARY (ALL PARK ENTRANCES).

Park entrance.	Usage tax (25 cents per capita passengers carried 1914 season).		Amount paid special licenses issued.	Number of wagons at \$10 each.	Number of horses at \$2 each.	Total paid.
	Number carried.	Paid.				
Licenses entering at northern entrance and at both northern and western entrances combined.....	321	\$80.25	\$90.00	64	59	\$928.25
Licenses entering at western entrance.....	36	9.00	.....	3	20	79.00
Licenses entering at eastern entrance.....	116	29.00	.....	15	97	373.00
Licenses entering at southern entrance and at both southern and eastern entrances combined.....	23	5.75	.....	3	75	185.75
Total.....	496	124.00	90.00	85	251	1,566.00

## RECOMMENDATIONS.

That it be decided for a definite period of time by the department maintaining the military force and that controlling the national park if the park shall continue to be policed by United States troops or if they shall in the near future be replaced by a civilian organization. A fixed policy in this regard is essential to a stable and progressive administration.

Very respectfully,

LLOYD M. BRETT,  
*Colonel of Cavalry, Acting Superintendent.*

THE SECRETARY OF THE INTERIOR.

## APPENDIX.

### RULES AND REGULATIONS.

Regulations of October 24, 1915, governing the distribution of animals from the Yellowstone National Park during the fiscal years 1914-15.

1. *General*.—Distribution of all animals will be limited to applications from Federal, State, county, and municipal authorities. None will be given to private parties. Allotments will be made in the order of receipt of applications, but preference will be given to shipments intended for National reservations and to those States not having theretofore received animals. Before elk will be allotted evidence must be furnished that the laws of the State where they are intended to be transported afford them complete protection during the close as well as the open season. In the case of all animals assurance must be given that they will be humanely and properly cared for.

2. *Expense*.—No charge will be made for animals, but applicants will be required to bear all expense of capture, crating, and hauling to Gardiner, Mont., the shipping point, and to arrange for payment of transportation charges from that place to point of destination. Provision should be made for an attendant to accompany elk shipped by freight in carload lots. Small consignments of elk or other animals should be forwarded by express, and arrangements should be made for suitable crates in which to transfer animals from car to place of destination.

3. *Elk*.—During the present fiscal year the total number of elk to be distributed will not exceed 1,000, and not more than 50 head will be allowed to any one State.

In view of the existence of several peculiar forms of elk on the Pacific coast, and the importance of keeping these elk distinct from the Rocky Mountain species, requests for elk intended for the Cascades, Sierra Nevada, or points west of these ranges will not receive approval.

In shipping elk by carload the number of head in any one car shall not exceed 30. This number will be permitted only in the case of yearlings shipped in a 36-foot car; in all other cases the number of elk shall not exceed 25 head per car. When cattle cars are used for the shipment of elk the lower part of the car must be covered with burlap, canvas, or some similar material to screen the animals from view and prevent them from being disturbed at stations en route. When box cars are used the doors should be left partly open for ventilation. Before shipping the elk all cars must be padded inside to a height equal to the shoulders of the animals. Ample arrangements must be made to provide food and water when cars are likely to be more than 12 hours en route. When-

ever possible the elk should be fed and watered within the car; otherwise shipments will be governed by the 28-hour law (act of Congress of June 29, 1906, 34 Stat., 607). When convenient snow should be furnished the elk instead of water, and tubs containing water or snow must be placed at the ends as well as in the middle of the car. Two partitions, one on each side of the door, must be provided as a place for food and water.

4. *Buffalo*.—A limited number of the older bulls from the tame herd will be distributed to such municipal parks—not more than two to any one park—the authorities of which will defray all expense of crating, hauling to cars, and transporting, and upon the further condition that at least two buffalo cows will be procured for each bull donated. Cows from the park herd will not be disposed of under any conditions.

5. *Beaver*.—A limited number of beaver will be distributed to points where the animals will have complete protection and where conditions are favorable for their increase.

6. *Bears*.—Bears, not to exceed two for any public park or zoological garden, may be shipped when properly crated.

7. *Other animals*.—Antelope, deer, moose, and mountain sheep will not be distributed at this time, owing to their limited numbers.

*Applications* should be addressed to the Secretary of the Interior, Washington, D. C.

#### GENERAL REGULATIONS APPROVED MAY 27, 1911.

The following rules and regulations for the government of the Yellowstone National Park are hereby established and made public pursuant to authority conferred by section 2475, Revised Statutes United States, and the act of Congress approved May 7, 1894:

1. It is forbidden to remove or injure the sediments or incrustations around the geysers, hot springs, or steam vents; or to deface the same by written inscriptions or otherwise; or to throw any substance into the springs or geyser vents; or to injure or disturb in any manner or to carry off any of the mineral deposits, specimens, natural curiosities, or wonders within the park.

2. It is forbidden to ride or drive upon any of the geyser or hot-spring formations, or to turn stock loose to graze in their vicinity.

3. It is forbidden to cut or injure any growing timber. Camping parties will be allowed to use dead or fallen timber for fuel. When felling timber for fuel, or for building purposes when duly authorized, stumps must not be left higher than 12 inches from the ground.

4. Fires shall be lighted only when necessary, and completely extinguished when not longer required. The utmost care must be exercised at all times to avoid setting fire to the timber and grass.

5. Hunting or killing, wounding or capturing any bird or wild animal, except dangerous animals when necessary to prevent them from destroying life or inflicting an injury, is prohibited. The outfits, including guns, traps, teams, horses, or means of transportation used by persons engaged in hunting, killing, trapping, ensnaring, or capturing such birds or wild animals, or in possession of game killed in the park under other circumstances than prescribed above, will be forfeited to the United States, except in cases where it is shown by satisfactory evidence that the outfit is not the property of the person



or persons violating this regulation, and the actual owner thereof was not a party to such violation. Firearms will only be permitted in the park on written permission from the superintendent thereof. On arrival at the first station of the park, guard parties having firearms, traps, nets, seines, or explosives will turn them over to the sergeant in charge of the station, taking his receipt for them. They will be returned to the owners on leaving the park.

6. Fishing with nets, seines, traps, or by the use of drugs or explosives, or in any other way than with hook and line is prohibited. Fishing for purposes of merchandise or profit is forbidden. Fishing may be prohibited by order of the superintendent of the park in any of the waters of the park, or limited therein to any specified season of the year, until otherwise ordered by the Secretary of the Interior.

7. No person will be permitted to reside permanently or to engage in any business in the park without permission, in writing, from the Department of the Interior. The superintendent may grant authority to competent persons to act as guides and revoke the same in his discretion, and no pack trains shall be allowed in the park unless in charge of a duly registered guide.

8. The herding or grazing of loose stock or cattle of any kind within the park, as well as the driving of such stock or cattle over the roads of the park, is strictly forbidden, except in such cases where authority therefor is granted by the Secretary of the Interior. It is forbidden to cut hay within the boundaries of the park excepting for the use of the wild game and such other purposes as may be authorized by the Secretary of the Interior or the park superintendent.

9. No drinking saloon or barroom will be permitted within the limits of the park.

10. Private notices or advertisements shall not be posted or displayed within the park, except such as may be necessary for the convenience and guidance of the public upon buildings on leased ground.

11. Persons who render themselves obnoxious by disorderly conduct or bad behavior, or who violate any of the foregoing rules, will be summarily removed from the park, and will not be allowed to return without permission, in writing, from the Secretary of the Interior or the superintendent of the park.

12. It is forbidden to carve or write names or other things on any of the mileposts or signboards or any of the platforms, seats, railings, steps, or any structures, or any tree in the park.

Any person who violates any of the foregoing regulations will be deemed guilty of a misdemeanor, and be subjected to a fine as provided by the act of Congress approved May 7, 1894, "to protect the birds and animals in Yellowstone National Park and to punish crimes in said park, and for other purposes," of not more than \$1,000, or imprisonment not exceeding two years, or both, and be adjudged to pay all costs of the proceedings.

#### INSTRUCTIONS APPROVED APRIL 15, 1914.

1. The feeding, interference with, or molestation of any bear or other wild animal in the park in any way by any person not authorized by the superintendent is prohibited.

2. *Fires*.—The greatest care must be exercised to insure the complete extinction of all camp fires before they are abandoned. All ashes and unburned bits of wood must, when practicable, be thoroughly soaked with water. Where fires are built in the neighborhood of decayed logs, particular attention must be directed to the extinguishment of fires in the decaying mold. Fire may be extinguished where water is not available by a complete covering of earth, well packed down.

Especial care should be taken that no lighted match, cigar, or cigarette is dropped in any grass, twigs, leaves, or tree mold.

3. *Camps*.—No camp will be made at a less distance than 100 feet from any traveled road. Blankets, clothing, hammocks, or any other article liable to frighten teams must not be hung at a nearer distance than this to the road. The same rule applies to temporary stops, such as for feeding horses or for taking luncheon.

Many successive parties camp on the same sites during the season, and camp grounds must be thoroughly cleaned before they are abandoned. Tin cans must be flattened and, with bottles, cast-off clothing, and all other débris, must be deposited in a pit provided for the purpose. When camps are made in unusual places, where pits may not be provided, all refuse must be hidden where it will not be offensive to the eye.

4. *Concessionaires*.—All persons, firms, or corporations holding concessions in the park must keep the grounds used by them properly policed and maintain the premises in a sanitary condition to the satisfaction of the superintendent.

5. *Bicycles*.—The greatest care must be exercised by persons using bicycles. On meeting a team the rider must stop and stand at side of road between the bicycle and the team—the outer side of the road if on a grade or curve. In passing a team from the rear the rider should learn from the driver if his horses are liable to frighten, in which case the driver should halt and the rider dismount and walk past, keeping between the bicycle and the team.

6. *Fishing*.—All fish less than 8 inches in length should at once be returned to the water with the least damage possible to the fish. Fish that are to be retained must be at once killed by a blow on the back of the head or by thrusting a knife or other sharp instrument into the head. No person shall catch more than 20 fish in one day.

7. *Dogs*.—Dogs are not permitted in the park.

8. *Grazing animals*.—Only animals actually in use for purposes of transportation through the park may be grazed in the vicinity of the camps. They will not be allowed to run over any of the formations nor near to any of the geysers or hot springs; neither will they be allowed to run loose within 100 feet of the roads.

9. *Formations*.—No person will be allowed on any formations after sunset without a guide.

10. *Hotels*.—All tourists traveling with the authorized transportation companies, whether holding hotel coupons or paying cash, are allowed the privilege of extending their visit in the park at any of the hotels without extra charge for transportation. However, 24 hours' notice must be given to the managers of the transportation companies for reservations in other coaches.

11. *Driving on roads of park.*—(a) Drivers of vehicles of any description, when overtaken by other vehicles traveling at a faster rate of speed, shall, if requested to do so, turn out and give the latter free and unobstructed passageway.

(b) Vehicles in passing each other must give full half of the roadway. This applies to freight outfits as well as any other.

(c) Racing on the park roads is strictly prohibited.

(d) Freight, baggage, and heavy camping outfits on sidehill grades throughout the park will take the outer side of the road while being passed by passenger vehicles in either direction.

(e) In making a temporary halt on the road for any purpose all teams and vehicles will be pulled to one side of the road far enough to leave a free and unobstructed passageway. No stops on the road for luncheon or for camp purposes will be permitted. A team attached to a vehicle will not be left without the custody of a person competent to control it; a team detached from a vehicle will be securely tied to a tree or other fixed object before being left alone.

(f) In rounding sharp curves on the roads, like that in the Golden Gate Canyon, where the view ahead is completely cut off, drivers will slow down to a walk. Traveling at night is prohibited except in cases of emergency.

(g) Transportation companies, freight and wood contractors, and all other parties and persons using the park roads will be held liable for violation of these instructions.

(h) Pack trains will be required to follow trails whenever practicable. During the tourist season, when traveling on the road and vehicles carrying passengers are met, or such vehicles overtake pack trains, the pack train must move off the road not less than 100 feet and await the passage of the vehicle.

(i) During the tourist season pack animals, loose animals, or saddle horses, except those ridden by duly authorized persons on patrol or other public duties, are not permitted on the coach road between Gardiner and Fort Yellowstone.

(k) Riding at a gait faster than a slow trot on the plateaus near the hotels where tourists and other persons are accustomed to walk is prohibited.

(l) Mounted men on meeting a passenger team on a grade will halt on the outer side until the team passes. When approaching a passenger team from the rear, warning must be given, and no faster gait will be taken than is necessary to make the passage, and if on a grade the passage will be on the outer side. A passenger team must not be passed on a dangerous grade.

(m) All wagons used in hauling heavy freight over the park roads must have tires not less than 4 inches in width. This order does not apply to express freight hauled in light spring wagons with single teams.

12. *Liquors.*—All beer, wine, liquors, whisky, etc., brought into the Yellowstone National Park via Gardiner to be carried over the roads through the reservation to Cooke City, must be in sealed containers or packages, which must not be broken in transit.

13. *Miscellaneous.*—Automobiles are not permitted in the park.<sup>1</sup>

<sup>1</sup> The regulation prohibiting the use of automobiles in the park was so amended as to allow their use on the road leading from Bozeman, Mont., to the southern portion of Gallatin County, Mont., and on Aug. 1, 1915, the Secretary of the Interior admitted automobiles for pleasure purposes only, under regulations and schedules approved by him.



Persons are not allowed to bathe near any of the regularly traveled roads in the park without suitable bathing clothes.

14. *Penalty.*—The penalty for disregard of these instructions is summary ejection from the park.

*Notices.*—(a) Boat trip on Yellowstone Lake:—The excursion boat on Yellowstone Lake plying between the Lake Hotel and the Thumb lunch station at the West Bay is not a part of the regular transportation of the park, and an extra charge is made by the boat company for this service.

(b) Side trips in park: Information relative to side trips in the park and the cost thereof can be procured from those authorized to transport passengers through or to provide for camping parties in the park; also at the office of the superintendent.

(c) All complaints by tourists and others as to service, etc., rendered in the reservation should be made to the superintendent in writing.

#### REGULATIONS OF JULY 7, 1915, GOVERNING THE ADMISSION OF AUTOMOBILES FOR THE SEASON OF 1915.

[Effective Aug. 1, 1915.]

Pursuant to authority conferred by section 2475, Revised Statutes, United States, and the act of Congress approved May 7, 1894, the following regulations governing the admission of automobiles into the Yellowstone National Park are hereby established and made public:

1. *Automobiles.*—The park is open only to such automobiles as are operated for pleasure and not to those carrying passengers who are paying, either directly or indirectly, for the use of the machine.

2. *Motor cycles.*—Motor cycles are not permitted to enter the park.

3. *Tickets of passage.*—Ticket of passage must be secured and paid for at the checking station where the automobile enters the park. This ticket must be conveniently kept, so that it can be exhibited to park guards on demand, and must be surrendered at the last checking station on leaving the park. Tickets of passage will show (a) name of owner, (b) license number of automobile, (c) name of State issuing license, (d) make of machine and manufacturer's number, (e) name of driver, (f) seating capacity of machine, and (g) number of passengers.

4. *Fees.*—Fees are payable in cash only, and will be as follows for each trip through the park:

For runabouts or single-seated cars.....	\$5. 00
For 5-passenger cars.....	7. 50
For 7-passenger cars.....	10. 00

5. *Muffler cut-outs.*—Muffler cut-outs must be closed while approaching or passing riding horses, horse-drawn vehicles, hotels, camps, or soldier stations.

6. *Distance apart—Gears and brakes.*—Automobiles while in motion must not be less than 100 yards apart, except for purpose of passing, which is only permissible on comparatively level or slight grades. All automobiles, except while shifting gears, must retain their gears constantly enmeshed. Persons desiring to enter the park in an automobile will be required to satisfy the guard issuing the ticket of passage that the machine in general, and particularly the brakes

and tires, are in first-class working order and capable of making the trip, and that there is sufficient gasoline in the tank to reach the next place where it may be obtained, and carry two extra tires. For this purpose all drivers will be required effectually to block and skid the rear wheels with either foot or hand brake, or such other brakes as may be a part of the equipment of the automobile. Gasoline can be purchased at regular supply stations as per posted notices.

7. *Speeds*.—Speeds must be limited to 12 miles per hour ascending and 10 miles per hour descending steep grades, and to 8 miles per hour when approaching sharp curves. On good roads with straight stretches, and when no team is nearer than 200 yards, the speed may be increased to 20 miles per hour. Horns must be sounded at all curves where the road can not be seen for at least 200 yards ahead, and when approaching teams or riding animals.

8. *Teams*.—When teams, saddle horses, or pack trains approach, automobiles will take the outer edge of the roadway, regardless of the direction in which they may be going, taking care that sufficient room is left on the inside for the passage of vehicles and animals. Teams have the right of way, and automobiles will be backed or otherwise handled as may be necessary so as to enable teams to pass with safety. In no case must automobiles pass animals on the road at a greater speed than 8 miles per hour.

9. *Fines*.—Fines or other penalties will be imposed for arrival of automobiles at any point before approved lapse of time, hereinafter given, at the following rates: \$0.50 per minute for each of first five minutes; \$1 per minute for each of the next 20 minutes; \$25 fine or ejection from the park, or both, in the discretion of the acting superintendent of the park, for being more than 25 minutes early.

10. *Penalties*.—Violation of any of the foregoing rules or general regulations for government of the park will cause revocation of ticket of passage, and, in addition to the penalties hereinbefore indicated, will subject the owner of the automobile to any damage occasioned thereby, immediate ejection from the reservation, and be cause for refusal to issue new ticket of passage to the owner without prior sanction in writing from the Secretary of the Interior.

11. *Accidents*.—When, due to breakdowns or accidents of any other nature, automobiles are unable to keep going or to reach the next stopping place on time, they must be immediately parked off the road, or where this is impossible, on the outer edge of the road, and wait until the next schedule for automobiles past that point, or until given special permission to proceed by park guards.

12. These regulations and schedules do not apply to automobiles passing over the county road in the northwest corner of the park, en route to the town of Yellowstone, Mont.

#### SCHEDULES AND GENERAL INSTRUCTIONS.

Automobiles may leave the park by any one of the authorized routes of entrance. Automobile drivers should compare their watches with the clocks at checking stations.

Automobiles stopping over at points other than the hotels and permanent camps will be allowed to resume travel only at such time as permits them to fall in with a subsequent regular automobile

schedule past the point of stop-over. Such automobiles while stopping over must park out of sight of, or at least 100 yards from, the main road.

Automobiles stopping over at permanent camps must leave the same at the proper time to conform with the published schedules from the nearest hotels. Detailed times of departure to comply with this provision will be posted at the particular camps concerned.

When, due to breakdowns or accidents of any other nature, automobiles are unable to keep going, or to reach the next stopping place on time, they must be immediately parked off the road, or where this is impossible, on the outer edge of the road, and wait until the next schedule for automobiles past that point, or until given special permission to proceed by park guards.

Automobiles will not be permitted for use on local trips around hot springs formations or other points of interest off the main roads, except in the case specially noted at Artist Point, in the morning schedule from the Lake Hotel to Canyon Hotel.

*Speeds.*—Speeds must be limited to 12 miles per hour ascending and 10 miles per hour descending steep grades, and to 8 miles per hour when approaching sharp curves. On good roads with straight stretches, and when no team is nearer than 200 yards, the speed may be increased to 20 miles per hour. No automobile shall pass another while in motion going in the same direction.

*Horns.*—The horn will be sounded on approaching curves, stretches of road which can not be seen for about 200 yards, and driving or riding animals; also on meeting other machines.

*Teams.*—When teams, saddle horses, or pack trains approach, automobiles will take the outer edge of the roadway, regardless of the direction in which they may be going, taking care that sufficient room is left on the inside for the passage of vehicles and animals. Teams have the right of way, and automobiles will be backed or otherwise handled as may be necessary so as to enable teams to pass with safety. In no case will automobiles pass animals on the road at a greater speed than 8 miles per hour.

In addition to the schedules herein given, automobiles must keep clear of any horse-drawn passenger vehicles running upon regular schedules which may be following them; and upon overtaking any horse-drawn passenger vehicles running upon regular schedules, automobiles must not attempt to pass or approach closer than within 150 yards of the same.

*Reduced engine power—Gasoline, etc.*—Due to the high altitude of the park roads, averaging nearly 7,650 feet for the belt line and east, north, and west entrances, the power of all automobiles is much reduced, so that about 50 per cent more gasoline will be required than for the same distance at lower altitudes. Likewise one lower gear will generally have to be used on grades than would have to be used in other places. A further effect that must be watched is the heating of the engine on long grades, which may become serious unless care is used. Gasoline can be purchased at regular supply stations as per posted notices.



	Miles.	Schedule A.		Schedule B.	
		Not earlier than—	Not later than—	Not earlier than—	Not later than—
Gardiner to Norris:					
Leave Gardiner entrance.....	0	6.00 a. m.	6.30 a. m.	2.30 p. m.	3.00 p. m.
Arrive Mammoth Hot Springs.....	5	6.30 a. m.	7.00 a. m.	3.00 p. m.	3.30 p. m.
Leave Mammoth Hotel.....	0	6.45 a. m.	7.15 a. m.	.....	.....
Leave 8-mile post.....	8	.....	8.00 a. m.	.....	.....
Arrive Norris.....	20	8.30 a. m.	9.00 a. m.	.....	.....
Norris to west entrance:					
Leave Norris.....	0	.....	.....	4.00 p. m.	4.30 p. m.
Arrive west entrance.....	27	.....	.....	6.00 p. m.	6.30 p. m.
(For Gallatin Station entrance see Note 1.)					
Norris to Fountain:					
Leave Norris.....	0	8.45 a. m.	9.15 a. m.	4.00 p. m.	4.30 p. m.
		(Via Mesa Road.)		(Via Mesa Road or Madison Junction.)	
Leave Firehole Cascades.....	14.7	.....	10.30 a. m.	.....	.....
Arrive Fountain Hotel.....	20	10.30 a. m.	11.00 a. m.	5.45 p. m.	6.15 p. m.
(For Gallatin Station entrance see Note 1.)					
West entrance to Fountain Hotel:					
Leave west entrance.....	0	6.45 a. m.	7.15 a. m.	.....	.....
Arrive Fountain Hotel.....	21	8.30 a. m.	9.00 a. m.	.....	.....
Fountain Hotel to Thumb:					
Leave Fountain Hotel.....	0	10.30 a. m.	11.00 a. m.	5.45 p. m.	6.15 p. m.
Arrive Upper Basin (Old Faithful Inn).....	9	12.00 m.	12.30 p. m.	6.45 p. m.	7.00 p. m.
Leave Upper Basin (Old Faithful Inn).....	0	2.30 p. m.	3.00 p. m.	7.00 a. m.	7.30 a. m.
Arrive Thumb Station.....	19	4.30 p. m.	5.00 p. m.	9.00 a. m.	9.30 a. m.
(For south entrance see Note 1.)					
Thumb to Lake Hotel:					
Leave Thumb Station.....	0	4.30 p. m.	5.00 p. m.	9.00 a. m.	9.30 a. m.
Arrive Lake Hotel.....	15	5.45 p. m.	6.15 p. m.	10.30 a. m.	11.30 a. m.
Lake Hotel to east boundary:					
Leave Lake Hotel.....	0	7.00 a. m.	7.30 a. m.	2.00 p. m.	2.30 p. m.
Arrive east boundary.....	28	9.30 a. m.	10.30 a. m.	4.30 p. m.	5.30 p. m.
East boundary to Lake Hotel:					
Leave east boundary.....	0	3.15 p. m.	3.45 p. m.	7.30 a. m.	8.00 a. m.
Arrive Lake Hotel.....	28	5.45 p. m.	6.15 p. m.	10.00 a. m.	11.00 a. m.
Lake Hotel to Canyon Hotel:					
Leave Lake Hotel.....	0	7.00 a. m.	7.30 a. m.	2.00 p. m.	2.30 p. m.
Leave Canyon Station.....	16	9.00 a. m.	10.00 a. m.	.....	.....
(See Note 2.)					
Arrive Canyon Hotel.....	17	9.10 a. m.	10.10 a. m.	3.15 p. m.	3.45 p. m.
Canyon to Norris:					
Leave Canyon Hotel.....	0	2.15 p. m.	2.30 p. m.	.....	.....
Arrive Norris.....	12	3.15 p. m.	3.30 p. m.	.....	.....
(For schedules from Norris to Fountain, Upper Basin, and west entrance, see p. —.)					
Canyon Hotel to Tower Falls:					
Leave Canyon Hotel.....	0	1.30 p. m.	2.00 p. m.	7.00 a. m.	7.30 a. m.
Arrive Tower Falls:					
Via Dunraven Pass.....	16	3.15 p. m.	3.45 p. m.	8.45 a. m.	9.15 a. m.
Via Mount Washburn.....	19	4.15 p. m.	4.45 p. m.	9.45 a. m.	10.15 a. m.
(For Cooke City entrance see Note 1.)					
Tower Falls to Gardiner:					
Leave Tower Falls.....	0	3.15 p. m.	4.45 p. m.	9.15 a. m.	10.15 a. m.
Arrive Mammoth Hot Springs.....	20	5.30 p. m.	6.45 p. m.	11.15 a. m.	12.15 p. m.
Leave Mammoth Hot Springs (via main road).....	0	7.00 a. m.	7.30 a. m.	2.30 p. m.	3.00 p. m.
Arrive Gardiner entrance.....	5	7.30 a. m.	8.00 a. m.	3.00 p. m.	3.30 p. m.
Mammoth Hot Springs to Gardiner:					
Leave Mammoth Hot Springs (via old road).....	0	8.45 a. m.	9.00 a. m.	11.45 a. m.	1.00 p. m.
Arrive Gardiner entrance.....	5	9.30 a. m.	9.45 a. m.	12.15 p. m.	1.45 p. m.

The acting superintendent of the park has authority to change these schedules if necessary.

NOTE 1.—Owing to scarcity of travel on the roads named, automobiles will be permitted to travel without schedule on the roads between the south entrance and the thumb; between the northeast or Cooke City entrance and Tower Falls Station; and between the west entrance (Yellowstone, Montana), and the northwest or Gallatin Station entrance. Upon entering the main roads at the Thumb, Tower Falls, and the west entrance, however, automobiles must conform to the regular schedules.

NOTE 2.—Automobiles making the morning trip from the Lake to the Canyon will be permitted to make the side trip to Artist Point provided they keep within the schedule upon passing Canyon Station.







